

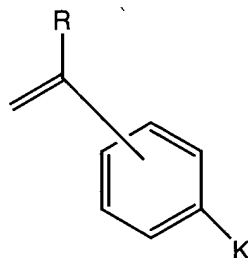
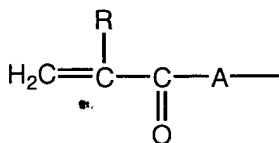
wherein

B is a straight or branched alkylene, oxaalkylene or oligo-oxaalkylene chain optionally containing one or more fluorine atoms or, if X or Y contains a terminal carbon atom bonded to B, a valence bond;

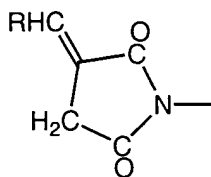
X is a zwitterionic group; and

Y is an ethylenically unsaturated polymerisable group selected from the group consisting of

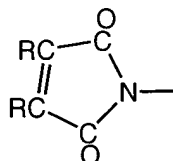
B1



$\text{CH}_2=\text{C}(\text{R})-\text{CH}_2-\text{O}-$ ,  $\text{CH}_2=\text{C}(\text{R})-\text{CH}_2 \text{OC}(\text{O})-$ ,  $\text{CH}_2=\text{C}(\text{R})\text{OC}(\text{O})-$ ,  $\text{CH}_2=\text{C}(\text{R})-\text{O}-$ ,  
 $\text{CH}_2=\text{C}(\text{R})\text{CH}_2\text{OC}(\text{O})\text{N}(\text{R}^1)-$ ,  $\text{R}^2\text{OOC}\text{CR}=\text{CRC}(\text{O})-\text{O}-$ ,  $\text{RCH}=\text{CHC}(\text{O})\text{O}-$ ,  
 $\text{RCH}=\text{C}(\text{COOR}^2)\text{CH}_2-\text{C}(\text{O})-\text{O}-$ ,



and



wherein:

R is hydrogen or a  $\text{C}_1$ - $\text{C}_4$  alkyl group;

$\text{R}^1$  is hydrogen or a  $\text{C}_1$ - $\text{C}_4$  alkyl group or  $\text{R}^1$  is  $-\text{B}-\text{X}$  where B and X are as defined above;

and

$\text{R}^2$  is hydrogen or a  $\text{C}_{1-4}$  alkyl group or  $\text{BX}$  where B and X are as defined above;

A is  $-\text{O}-$  or  $-\text{NR}^1-$ ;

K is selected from the group consisting of  $-(CH_2)_pOC(O)-$ ,  $-(CH_2)_pC(O)O-$ ,  $(CH_2)_pOC(O)O-$ ,  $-(CH_2)_pNR^3-$ ,  $-(CH_2)_pNR^3C(O)-$ ,  $-(CH_2)_pC(O)NR^3-$ ,  $-(CH_2)_pNR^3C(O)O-$ ,  $-(CH_2)_pOC(O)NR^3-$ ,  $-(CH_2)_pNR^3C(O)NR^3-$  (in which the groups  $R^3$  are the same or different),  $-(CH_2)_pO-$ ,  $-(CH_2)_pSO_3-$ , and optionally in combination with B, a valence bond and p is from 1 to 12 and  $R^3$  is hydrogen or a  $C_1$ - $C_4$  alkyl group;

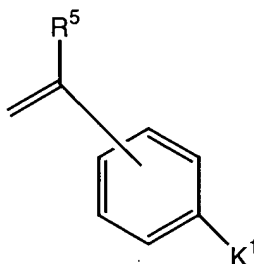
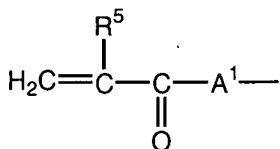
b) an aromatic group containing monomer of the general formula II

$Y^1R^4$

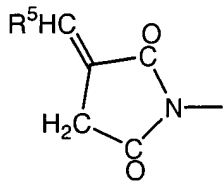
II

wherein  $Y^1$  is selected from the group consisting of

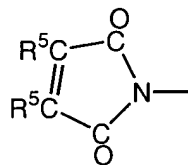
B1



$CH_2=C(R^5)-CH_2-O-$ ,  $CH_2=C(R^5)-CH_2OC(O)-$ ,  $CH_2=C(R^5)OC(O)-$ ,  $CH_2=C(R^5)-O-$ ,  $CH_2=C(R^5)CH_2OC(O)N(R^6)-$ ,  $R^7OOCCH=CR^5C(O)-O-$ ,  $R^5CH=CHC(O)O-$ ,  $R^5CH=C(COOR^7)CH_2-C(O)-O-$ ,



and



wherein:

$R^5$  is hydrogen or a  $C_1$ - $C_4$  alkyl group;

$R^6$  is hydrogen or a  $C_1$ - $C_4$  alkyl group or  $R^6$  is  $R^4$ ;

$R^7$  is hydrogen or a  $C_{1-4}$  alkyl group or  $R^4$ ;

$A^1$  is  $-O-$  or  $-NR^6-$ ;

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$K^1$  is selected from the group consisting of  $-(CH_2)_qOC(O)-$ ,  $-(CH_2)_qC(O)O-$ ,  $-(CH_2)_qOC(O)O-$ ,  $-(CH_2)_qNR^8-$ ,  $-(CH_2)_qNR^8C(O)-$ ,  $-(CH_2)_qC(O)NR^8-$ ,  $-(CH_2)_qNR^8C(O)O-$ ,  $-(CH_2)_qOC(O)NR^8-$ ,  $-(CH_2)_qNR^8C(O)NR^8-$  (in which the groups  $R^8$  are the same or different),  $-(CH_2)_qO-$ ,  $-(CH_2)_qSO_3-$ , and a valence bond and  $q$  is from 1 to 12 and  $R^8$  is hydrogen or a  $C_1$ - $C_4$  alkyl group;

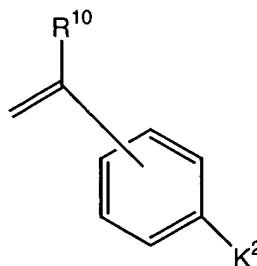
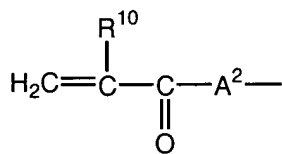
and  $R^4$  is an aromatic group; and

c) a cross-linking monomer of the general formula III

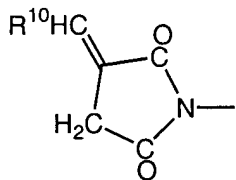


in which  $n$  is an integer of at least 2, each  $Y^2$  is selected from the group consisting of

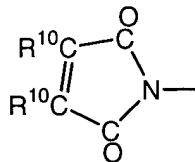
B1



$CH_2=C(R^{10})-CH_2-O-$ ,  $CH_2=C(R^{10})-CH_2OC(O)-$ ,  $CH_2=C(R^{10})OC(O)-$ ,  $CH_2=C(R^{10})-O-$ ,  $CH_2=C(R^{10})CH_2OC(O)N(R^{11})-$ ,  $R^{12}OOCCH=CHC(O)-O-$ ,  $R^{10}CH=CHC(O)O-$ ,  $R^{10}CH=C(COOR^{12})CH_2-C(O)-O-$ ,



and



wherein:

$R^{10}$  is hydrogen or a  $C_1$ - $C_4$  alkyl group;

$R^{11}$  is hydrogen or a  $C_1$ - $C_4$  alkyl group;

$R^{12}$  is hydrogen or a  $C_1$ - $C_4$  alkyl group;

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$A^2$  is -O- or -NR<sup>11</sup>-;

$K^2$  is selected from the group consisting of -(CH<sub>2</sub>)<sub>r</sub>OC(O)-, -(CH<sub>2</sub>)<sub>r</sub>C(O)O-,  
-(CH<sub>2</sub>)<sub>r</sub>OC(O)O-, -(CH<sub>2</sub>)<sub>r</sub>NR<sup>12</sup>-, -(CH<sub>2</sub>)<sub>r</sub>NR<sup>12</sup>C(O)-,  
-(CH<sub>2</sub>)<sub>r</sub>C(O)NR<sup>12</sup>-, -(CH<sub>2</sub>)<sub>r</sub>NR<sup>12</sup>C(O)O-, -(CH<sub>2</sub>)<sub>r</sub>OC(O)NR<sup>12</sup>-, -(CH<sub>2</sub>)<sub>r</sub>NR<sup>12</sup>C(O)NR<sup>12</sup>- (in which  
the groups R<sup>12</sup> are the same or different), -(CH<sub>2</sub>)<sub>r</sub>O-, -(CH<sub>2</sub>)<sub>r</sub>SO<sub>3</sub> - and a valence bond and r is  
from 1 to 12 and R<sup>12</sup> is hydrogen or a C<sub>1</sub>-C<sub>4</sub> alkyl group;

and R<sup>9</sup> is an n-functional organic group;

B1 wherein the cross-linked polymer is swellable in water such that the water content of the  
polymer when fully swollen in deionized water is in the range of 10 to 50% by weight, and the  
zwitterionic monomer of general formula I is present in an amount of at least 5 mole %, the  
aromatic group containing monomer of general formula II is present in an amount of at least 10  
mole %, and the cross-linking monomer of general formula III is present in an amount of 0.01 to  
10 mole %, based upon total monomer.

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38 (Amended): A polymer according to claim 37 in which the molar ratio of

B2 crosslinking monomer in which R<sup>9</sup> is aromatic to crosslinking monomer in which R<sup>9</sup> is aliphatic  
is in the range 10:1 to 1:10.

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